

5 2-mercaptoethanol (EDS), linker Gramicidin B, membrane spanning  
6 lipid C (MSL-C) and membrane spanning lipid D (MSL-D) [or other  
7 suitable linker molecules and other ion channel or ionophore com-  
8 bination], wherein the ratio of Linker Lipid A to the disulfide  
9 of mercaptoacetic acid (MAAD) or 2-mercaptoethanol (EDS) is 2:1,  
10 the ratio of Linker Lipid A + MAAD or EDS to MSL-D is in the  
11 range of 10:1 to 100:1, and the ratio of Linker Lipid A + MAAD or  
12 EDS to MSL-C is between 20,000:1 and 100:1;

17 (3) Rinsing the electrode with a suitable organic  
18 solvent; and

19 (4) Removing the excess organic solvent used for  
20 rinsing.

Please delete claims 2-5 and 7.

1                    713. (Amended) A method of producing a monolayer  
2 electrode membrane comprising:-

(1) Forming a solution containing the disulfide of mercaptoacetic acid (MAAD) [or similar molecule] or 2-mercptoethanol (EDS), membrane spanning lipid C (MSL-C) and/or membrane spanning lipid D (MSL-D) and, optionally, Linker Lipid A, linker Gramicidin B [or other suitable linker molecules and

8 other ion channel combinations);

14 (3) Rinsing the electrode with a suitable organic  
15 solvent; and

(4) Removing the excess organic solvent used for rinsing , wherein the solution in step (1) contains more than a molar % of 50% of a membrane spanning lipid.

1               14. (Amended) A method according to claim 13, wherein  
2       the solution in step (1) contains more than a molar % of [70% of  
3       a membrane spanning lipid] 70% of membrane spanning Lipid C  
4       and/or membrane spanning Lipid D, 29% MAAD or 2-mercaptoethanol  
5       (EDS) and 1% other membrane spanning lipids.

1           18. (Twice Amended) A method according to [any one of  
2         claims] claim 13, [wherein MAAD, or similar spacer molecule, such  
3         as EDS] wherein the disulfide of mercaptoacetic acid (MAAD) or 2-  
4         mercaptoethanol (EDS) is covalently linked to the membrane  
5         spanning lipids C or D.

<sup>1</sup> <sup>2</sup> <sup>19.</sup> (Twice Amended) A method according to [any one of